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USSR Report

AGRICULTURE

No. 1293

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

EARLY GRAIN SOWING--Yakutsk--The farmers in the Yakutskaya ASSR were pleased by the early arrival of spring. They commenced their sowing of grain crops 10 days earlier than usual. The warm and snowy winter provided the soil with an ample amount of moisture. Despite the fact that permafrost reigns beneath the 1-meter layer of soil, the farmers in this northern autonomous republic have been obtaining stable yields of rye, oats and barley during the past few years. [Text] [Moscow TRUD in Russian 17 May 81 p 1] 7026

PRIMORSKIY KRAY SOWING OPERATIONS--Dal'nerechensk--Sowing operations have now reached the Pacific Ocean coast of the country. The farms in the northern regions of Primorskiy Kray have this year commenced sowing their barley considerably earlier than in past years. In the southern regions the field work has been delayed by a severe snow hurricane. The complex detachments of sowing personnel are equipped with powerful caterpillar tractors. Notwithstanding the increase in the area to be sown in grain crops, the Primorskiy Kray farmers are taking advantage of the experience of the Ipatovo farmers and they intend to complete their sowing work in just 50-80 hours. [Text] [Moscow GUDOK in Russian 9 Apr 81 p 1] 7026

COMPLICATED WEATHER CONDITIONS--Vladivostok, 25 Jul--The farms in Primorskiy Kray have begun their grain harvest operations. Under complicated weather conditions, they must gather in their crops from an area in excess of 200,000 hectares in just 70-80 working hours. In some areas the high dense grain crops have lodged. In order to avoid losses, the machine operators have adjusted their equipment and re-equipped their harvesters for a low cutting. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 Jul 81 p 1] 7026

320,000 HECTARES OF GRAIN CROPS--Ivanovo, 25 Jul--Three hundred and eleven harvesting-transport complexes have been created at kolkhozes and sovkhozes throughout the oblast. They must harvest grain crops from an area of 320,000 hectares. The farms in Gavrilovo-Posadskiy, Ivanovskiy and Yur'yevetskiy Rayons have made fine preparations for the grain harvest work. The machine operators in Ivanovskiy, Palekhskiy and Gavrilovo-Posadskiy Rayons, where the initial thousands of hectares of winter rye and wheat have already been harvested, have commenced thrashing the grain in an organized manner. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 Jul 81 p 1] 7026

ROSTOVSKAYA OBLAST GRAIN HARVEST--Rostov-na-Donu--The workers in Semikarakorskiy Rayon were the first in Rostovskaya Oblast to complete the harvesting and thrashing of their grain crops. [Text] [Moscow TRUD in Russian 26 Jul 81 p 1] 7026

EARLY RIPENING OF GRAIN CROPS--Smolensk--The Smolensk farmers have commenced harvesting their grain crops. This year the winter and spring crops ripened 2 weeks earlier than usual. [Text] [Moscow TRUD in Russian 26 Jul 81 p 1] 7026

GRAIN HARVEST PLANS--Kirov--The mass harvesting of grain crops has commenced in the southern and central zones of the oblast. The ripening of the grain crops has been accelerated by unusually hot weather. The front of the busy harvest campaign is rapidly advancing northwards. This year the Kirovskaya Oblast kolkhozes and sovkhozes must harvest grain crops from an area of 1.4 million hectares. The majority of the farms are planning to complete the harvest work as rapidly as possible. Six hundred harvesting-transport complexes are being employed. [Text] [Moscow TRUD in Russian 25 Jul 81 p 1] 7026

NEW BURYATSKAYA-79 WHEAT STRAIN--Ulan-Ude--The new Buryatskaya-79 wheat strain was developed by plant breeders in the autonomous republic. It ripens early, is resistant to lodging and can withstand both cold and dry weather. The new wheat continues the genealogy of the best strains created by plant breeders in the Buryatskaya ASSR. They already occupy 200,000 hectares of Trans-Baykal fields and have been disseminated to Krasnoyarskiy Kray and the Tuvinskaya ASSR. [Text] [Moscow GUDOK in Russian 17 Apr 81 p 1] 7026

SNOW THAWING METHOD--Magadan--Operation "Snow Removal," begun by Magadan aviators, will hasten the arrival of spring on the northern fields. They are carrying out low-level flights over the snow covered fields, leaving behind black trails of ash mixed with sand. This "dust" turns the snow black in color upon reaching the ground, thus accelerating the thawing of the snow. By thus processing from the air tracts of land at the taiga Tauyskiy, Rassvet and Srednekanskiy sovkhozes, the aviators are bringing the sowing operations that much closer. [Text] [Moscow GUDOK in Russian 21 Apr 81 p 1] 7026

MORE SUCCULENT FEED--Khabarovsk, 21 May--"The sowing is being carried out by experts at obtaining high yields." Thus read the signs hanging from units being operated by many machine operators in the Priamur'ye region, as the latter continue to sow their corn. Two hundred and seventy corn growing specialized teams and brigades have been created at sovkhozes and kolkhozes in the Priamur'ye region. This year the area of plantations has been increased by more than 1,000 hectares through the development of virgin land tracts of land. This year the plans call for the yield of corn fodder to be increased by twofold. On almost half of all of the plantations, the corn sowings will be combined with soybeans and this will raise the protein content. these measures will make it possible to ensure that the farms are supplied adequately with succulent feed. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 22 May 81 p 1] 7026

EARLY SOWING OPERATIONS--Khabarovsk, 15 Apr--The workers at the Pogranichnyy Sovkhoz arranged ceremonial departures for their machine operators as they left for the fields. The grain growers at this farm were fully prepared for the sowing campaign and they have vowed to complete it in a high quality manner in just 100 working hours. The collectives of all sowing complexes and detachments in the kray have resolved to complete their sowing work in a rapid manner. [by Yu. Baklanov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 16 Apr 81 p 1] 7026

WORKING HOURS SET--Today the farmers in the Priamur'ye region moved their plowing and sowing units out onto the fields. They have resolved to carry out the sowing of their early grain crops as rapidly as possible -- within 100 working hours. In keeping with the example set by the Ipatovo farmers, mechanized complexes staffed with powerful tractors and wide-swath sowing units have been created on farms throughout the kray. The farmers plan to obtain no less than 17 quintals per hectare. [Text] [Moscow KRASNAYA ZVEZDA in Russian 3 Apr 81 p 1] 7026

GRAIN CROP SOWING COMPLETED--Blagoveshchensk, 28 Apr--The farmers in Tambovskiy Rayon have completed sowing their grain crops on all 67,000 hectares. They applied mineral fertilizer to the rows simultaneously with the seed. This year, many farms plan on obtaining yields of 30 quintals of grain. The machine operators in neighboring rayons -- Ivanovskiy, Konstantinovskiy and others -- are completing their sowing operations. [by Yu. Baklanov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 29 Apr 81 p 1] 7026

FOLLOWING SCIENTIFIC RECOMMENDATIONS--Irkutsk--Despite the unstable weather, the kolkhozes and sovkhozes in Irkutskaya Oblast have commenced their mass sowing of spring crops. Following the recommendations of the scientists, the farmers are introducing a leading technology into operations, they are striving to prevent a pause from developing between the preparation of the soil and the sowing operations and they are employing mineral fertilizers extensively. [Text] [Moscow TRUD in Russian 7 Apr 81 p 1] 7026

TOP DRESSING APPLIED--Sakhalin--Spring came early this year to the island oblast. The farmers applied a top dressing to the plantings and undertook to improve the meadows and pastures. The machine operators at sovkhozes and the Sakhalinsel'khozkhimiya Association have already applied a top dressing to 2,000 hectares of grasses. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 26 Apr 81 p 1] 7026

EQUIPMENT PREPARATION COMPLETED--Kyzyl--The grain growers in Piy-Khemskiy Rayon were the first in the Tuvinskaya ASSR to complete their equipment preparation work; they exceeded their schedule for repair work by 1 month. The farmers in the autonomous republic have joined actively in the socialist competition to fulfill and overfulfill successfully the tasks of the Eleventh Five-Year Plan. Sixty two complex sowing detachments were staffed. [Text] [Moscow TRUD in Russian 7 Apr 81 p 1] 7026

MASS SOWING OF GRAIN CROPS--Kyzyl, 16 May--The mass sowing of grain crops has commenced in the Tuvinskaya ASSR. Complex mechanized detachments which are following the example set by the workers in Ipatovskiy Rayon are being employed. This spring there is a large amount of anti-erosion equipment out on the fields. The extensive use of this equipment will make it possible to create favorable conditions for obtaining high yields. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 17 May 81 p 1] 7026

GRAIN PROGRESS ON KARSHI STEPPE--Working round the clock is a distinguishing trait of this year's grain harvest on the Karshi Steppe. Despite adverse weather conditions--pouring rains in the spring and then cruel sand storms--the people prevailed. The virgin land workers in Kashkadar'inskaya Oblast have promised to get no less than 340,000 tons of grain. [Excerpts] [Moscow SEL'SKAYA ZHIZN' in Russian 4 Jul 81 p 1)

CSO: 1824/380

POST-HARVEST CROP PROCESSING

PROCUREMENT MINISTRY'S FIVE-YEAR TASKS DESCRIBED

Moscow MUKOMOL'NO-ELEVATORNAYA I KOMBIKORMOVAYA PROMYSHLENNOST' in Russian No 5, May 81 pp 1-4

[Article by Grigoriy Sergeyevich Zolotukhin, USSR minister of procurement and delegate to the 26th CPSU Congress]

[Text] The 26th CPSU Congress, which has just been held, is a historical landmark in the life of the party, the Soviet people and all progressive humanity. It vividly demonstrated the great achievements of our party in building communism which have been attained under the leadership of the Communist Party of the Soviet Union, and it defined the main lines and tasks of the USSR's economic and social development in the 1981-1985 period and over the period up to the year 1990.

Numerous convincing cases and impressive figures were presented at the congress in the statements of the delegates, providing evidence that over the last decade our country has made substantial strides along all lines of communist construction.

Fixed productive capital of all sectors of the economy more than doubled in that period. The gross social product and national income increased 1.7-fold and 1.6-fold, respectively. The volume of industrial output rose 1.8-fold, and labor productivity rose almost 1.5-fold.

The purposive effort of the party and people aimed at lifting up agriculture is bringing perceptible results. The average annual gross grain harvest over the 5-year period reached 205 million tons for the first time. By comparison with the 10th Five-Year Plan there was a substantial growth in average annual procurements of the principal farm products.

A broad program was carried out to raise the prosperity of the people.

The labor force of the elevator, milling and rolling, and mixed feed industry devoted much strength and energy to increasing the state's centralized food stocks in every way; they worked strenuously every year so that the grain coming in from procurements would be accepted, dried and cleaned without hindrances, to ensure its reliable preservation and punctual processing and delivery to the consumer. In spite of certain difficulties, the country's population was assured uninterrupted supply of milled and hulled products and the socialized livestock-raising industry was supplied mixed feed in accordance with the stocks allocated.

The work force of industrial enterprises, which staged socialist competition on a broad scale, completed the assignment of the 10th Five-Year Plan ahead of schedule for the principal indicators. Output and sales exceeded the plan by more than 1 billion rubles, the output of quality flour exceeded the plan by more than 1.7 million tons, and the output of mixed feed by 4.2 million tons. The assignment for profit from procurement and industrial activity and for the rise of labor productivity in industry was overfulfilled.

In the 10th Five-Year Plan efforts continued toward the further development of the physical production plant of enterprises of the USSR Ministry of Procurements: elevators and grain-storage facilities were built, milling enterprises were put into operation with a capacity of about 4 million tons, and mixed feed mills were put into operation with an annual output of more than 15.7 million tons. The equipment installed makes it possible to receive, process and store all the grain purchased for state resources, to ship raw materials to consumers on a planned basis, to produce flour and rolled products in the necessary amounts, and to meet the needs of animal husbandry for mixed feed.

A program of social measures was carried out.

Yet the results achieved could have been far greater. The serious shortcomings and oversights in the effort made it impossible to fully utilize the potential that existed and to solve a number of fundamental problems in increasing procurements of farm products and in developing and raising the level of utilization of the physical production plant of grain-receiving and grain-processing enterprises.

It was noted at the 26th congress that aside from causes of an objective nature, the results were also affected by shortcomings in planning and management, a lowering of standards by certain local supervisory agencies, and cases of breaches of discipline and poor management. These critical remarks apply fully to the procurement system.

Unsatisfactory utilization of grain driers, grain-cleaning machines and grain-storage facilities at a number of enterprises resulted in spontaneous heating and deterioration of the quality of the grain, and every year a large amount of grain has to be shipped unnecessarily for drying and storage at other grain-receiving enterprises.

Flour losses have been occurring in the form of shortfall from the standard rates of yield. Because of rejects and breaches of processing discipline there are large losses and overexpenditure of raw materials in the mixed feed industry, and cases are still not uncommon when substandard mixed feeds are produced. Plans are not being fulfilled for the output of ground mixed feeds and protein and vitamin additives.

Given the centralized use of state grain resources, particular importance is attributed to strict observance of schedules and proper expenditure of the grain, flour, rolled products, mixed feeds and also raw materials allocated to the mixed feed industry.

Inspections have established cases of overexpenditure of grain stocks allocated for production of mixed feed by the procurements ministries of AzSSR, UkSSR and RSFSR. In ESSR cases have been disclosed of flagrant violation of procedure in expenditure of protein-rich and other nongrain raw materials obtained for production of mixed feed. Similar shortcomings have also been noted in the procurements ministries of other union republics.

Inordinately large amounts of grain (about 40 percent of total shipments) are being moved within oblasts, which sometimes results in underfulfillment of assignments for interrepublic deliveries.

The distance traveled by the average grain shipment is still long. There are large interrepublic shipments of bran.

Railroad cars are standing for long periods of time during loading and unloading operations. The causes of this situation lie in unsatisfactory use of loading and unloading equipment, slow construction and expansion of facilities for receiving grain from grain cars, and the half-hearted introduction of container and pallet shipments. The installation of certain rail-car unloaders have been drawn out for long years. The excessive standing time of cars has been especially great at enterprises of the RSFSR, KaSSR and UkSSR procurements ministries. All of this inevitably increases shipping costs and detracts from the efficiency of operation.

There have also been breaches of discipline in fulfillment of plans. Certain procurements ministries of union republics have insistently brought about downward adjustments of production plans for flour, rolled products, and mixed feed without sufficient justification. At the same time milling and mixed feed enterprises have not been operating at a uniform pace. The unjustified downtime of equipment and machines, the tardy delivery of grain and ingredients to production, and departures from the technological process of producing flour and mixed feed resulted in an output for the first 6 months which was less than 50 percent of the annual plan. We must mention that after approval the plan assumes the force of a law which all are required to carry out to the letter.

Comrade L. I. Brezhnev emphasized in his report address to the 26th CPSU Congress: "The time has evidently come to tighten requirements both with respect to planning discipline and also with respect to the quality of the plans themselves. The plan must unconditionally be realistic and internally consistent. But it must also be carried out just as unconditionally."

Construction workers, who failed to assimilate more than 400 million rubles of capital investments and who failed to deliver sizable capacities for milling, rolling and mixed feed enterprises, owe us a great deal.

Procurements ministries of the union republics are not showing enough scrupulousness concerning construction of silos whose design includes protection of horizontal and vertical joints.

A number of industrial projects still have major defects when they are submitted for acceptance for operation. There are cases when actual construction time exceeds the allowed construction time 2-3-fold.

Procurements ministries of the union republics bear a large part of the blame for this state of affairs in construction; they have not rendered assistance in filling out the assignment for project planning on time, and they allowed delays in approval of the TEO [feasibility study], selection and clearing of construction sites, delivery of equipment, and the staffing of projects near completion with operating personnel. Once the project plan has been prepared, concurred in by everyone and approved, certain procurements ministries of union republics make all sorts of corrections and changes. They even do this in the year when the enterprise is to be put into operation. This is an intolerable way to do things.

Procurements ministries of the union republics have been slack in monitoring fulfillment of contractual obligations by construction contractors and the quality of construction, above all the procurements ministries of RSFSR, UkSSR, KaSSR and TuSSR.

The system of the USSR Ministry of Procurements faces large and crucial tasks in the 11th Five-Year Plan.

For the sake of fuller satisfaction of the growing needs of the public for foodstuffs the 26th CPSU Congress has deemed it indispensable to draft a food program. Carrying out the program will promote proportional and balanced development of the branches of the agroindustrial complex and a substantial strengthening of its physical production plant and the economic relations among the branches.

Increasing grain production and purchases is a very important segment in carrying out the food program. The task has been set in the current 5-year period of increasing the output and purchases of millet, buckwheat, rye, rice, grain of vigorous and hard varieties of wheat, brewing grades of barley, and corn, and the share of forage crops is to be substantially increased.

It was noted at the congress that reality dictates the necessity of raising all planning work to a qualitatively new level. This applies to all units of planning, agricultural and procurements agencies and directly to the enterprises and organizations of the USSR Ministry of Procurements. The CPSU Central Committee and USSR Council of Ministers have adopted a specific decree on improvement of planning and economic incentives for the production and procurement of farm products. It is the task of the procurements ministries of union republics and their local agencies to organize unswerving fulfillment of this most important document.

In setting forth the tasks for the current 5-year period at the 26th party congress Comrade L. I. Brezhnev said: "Every sector and industry confronts its urgent tasks and specific problems. But there are problems which encompass all the spheres of the national economy, and the principal one is to complete the transition to a predominantly intensive development strategy." The new 5-year plan calls for final results to increase faster than expenditures of labor and materials and a substantial increase in the scale of construction of projects for production purposes.

In the 1981-1985 period the USSR Ministry of Procurements must put milling enterprises into operation with a capacity to process 29,800 tons of grain per day, mixed feed mills capable of manufacturing 66,500 tons of mixed feed per day, and elevators with a capacity of 20 million tons. The total volume of industrial output will increase at a rate faster than 14 percent; moreover, in the All-Union Industrial Association "Soyuzpromelevatormel'mash" the growth rate will be more than 23 percent. In physical terms the output of flour in the superior grade is to increase 24-27 percent, the output of hulled and rolled products 15 percent, the output of mixed feed 13-15 percent, the output of protein and vitamin additives more than twofold, and the production of processing equipment 28 percent, which corresponds to the main lines of the economy's development set forth by the 26th party congress.

The industry of the procurements ministries will develop at the fastest pace in UzSSR, TaSSR, AzSSR, KaSSR, MSSR and KiSSR. This is dictated by the need to equalize levels of economic development of the industry throughout all the union republics, to augment each republic's physical potential, and so that the local population becomes more actively involved in the sphere of production.

Carrying out this program will also make it possible to substantially reduce the shipment of flour to the regions of Central Asia and the Transcaucasus and to make fuller use of milling offals in the production of mixed feed within the union republics.

The task has been set in the new 5-year period of achieving a turnaround in combating losses, of learning to be thrifty with physical inventories and labor resources. In this connection a restriction on the expenditure of all resources will be introduced. Every ministry and enterprise will be given assignments for conservation of resources.

The plans call for further development of those industries involved in storing and processing grain. The milling industry will be retooled by supplying it with improved and more productive equipment.

More than 20 machinebuilding ministries and departments have become involved in manufacturing milling equipment. The USSR Ministry of Procurements will receive complete equipment for construction and reconstruction of 50 milling plants during the current 5-year period.

The retooling of milling enterprises represents a true technical revolution in milling and will make it possible to substantially improve the assortment of flour and to increase the operating efficiency of enterprises.

In view of the fact that "... livestock raising is today the crucial segment of the front in rural areas," enlargement of the capacities of mixed feed enterprises will proceed at a faster pace than in the last 5-year period. Along with construction of new mixed feed mills, much attention must be paid to augmenting capacities through reconstruction and retooling of existing enterprises.

Exceptional importance is being paid to further development of the mixed feed industry in the Nonchernozem Zone of RSFSR. The USSR Ministry of Procurements has set assignments for further augmentation of production of this product in order to augment the production of mixed feeds and protein and vitamin additives there.

Along with construction of reinforced-concrete silos, in the current 5-year period construction of metal silos at grain-receiving enterprises will experience widespread development, especially in remote areas and also as part of mixed feed and milling and rolling enterprises. Metal silos with a capacity of about 2 million tons are to be built. Particular efforts of the V/O Soyuzelevatorstroy and the procurements ministries of the union republics should be concentrated on fulfillment of the plan.

The party's Central Committee and USSR Council of Ministers have defined a straightforward program for converting construction contractors to the new procedure for construction, settlement and acceptance of completed projects for operation, which in particular calls for increased responsibility on the part of builders and gradual transition to acceptance of projects on a "turnkey" basis. The effort should be stepped up to speed up introduction of this system in construction organizations of the USSR Ministry of Procurements and with the help of contracting ministries to speed up conversion of construction of milling and mixed feed plants and elevators to this progressive procedure for carrying out projects.

The USSR Ministry of Procurements must achieve a substantial change in the form of higher efficiency of capital investments. Instructions of the party should be carried out more vigorously in resolutely combating the scattering of capital investments, in concentrating them on the most important segments and in reducing the amount of construction in process. A barrier must moreover be set up against low-quality and unfinished work. New projects should be accepted only if the quality of all construction and installation work meets a high standard.

Successful fulfillment of the construction program necessitates a radical restructuring of the work of the ministry's project planning institutes, shorter project planning time, and substantial improvement of the quality and efficiency of project plans.

Highly effective directions have been defined in recent years in elevator construction and in the retooling of the milling industry. Much new machinery and equipment has made its appearance in the mixed feed industry. Progressive manufacturing processes have been developed. But certain managers of industrial enterprises are not showing initiative, persistence and a businesslike attitude with respect to use of innovations in production. Comrade L. I. Brezhnev remarked at the 26th party congress that dutifulness and discipline should be organically combined in one's work with bold initiative and enterprise. There needs to be a serious change in the attitude toward scientific-technical progress and toward the application of scientific and technical advances, and invention and production innovation must be given a green light.

If the tasks of reequipping grain-receiving and grain-processing enterprises are to be performed successfully, scientific research institutes will have to be converted more rapidly to the new procedure for financing and payment will have to be made for scientific research development projects that have been completed and accepted by the customer.

Raising production efficiency and the quality of performance is still the pivot of multiannual economic policy. The ways of performing this fundamental task have been set forth in the well-known decree of the CPSU Central Committee and USSR Council of Ministers on improving the economic mechanism. The procurements ministries of the union republics are constantly and unstintingly monitoring the problems of increasing the utilization of the economic potential that has been built up in the industry.

It would be a good thing to develop a movement for exemplary milling and rolling, mixed feed and elevator enterprises. The appropriate conditions need to be worked out for the material and moral incentives of enterprises, and real work needs to be done in that direction. The scientific and technical community of the USSR Ministry of Procurements should play a large role in this.

The 26th CPSU Congress paid particular attention to the problems of increasing the quality and efficiency of managerial work through broad use of computer equipment and further development and higher efficiency of computerized management systems. The procurements ministries of the union republics must attain a higher level of utilization of the physical facilities of computerized management systems which have been built.

In the context of intensification of production and the shortage of manpower resources, it remains a most important task to train and improve the qualifications of personnel and to keep them at enterprises. During the last 5-year period about 19,000 specialists came into grain-receiving and grain-processing enterprises. Over that same period of time 191,000 workers in the most common occupations were trained. Definite work has been done to train personnel for the mixed feed industry: The All-Union School for Training Skilled Workers in the Mixed Feed Industry has been opened in Alma-Ata, and at the Buturlinovka Tekhnikum a group has been organized to train specialists for mixed feed enterprises from among young people sent by the TuSSR procurements ministry.

At the same time there are also unresolved problems in the work with personnel: Turnover is still high, especially at grain-receiving and grain-processing enterprises in the country's eastern regions; few young people are sent from enterprises for training in institutes and tekhnikums, the housing problem is not really being solved, there is a lack of restaurants, medical stations, children's preschool institutions, stores, clubs and recreation centers.

Particular attention was made to organizing the training of specialists for new milling plants. The principal effort in this direction should be made by the Institute for Improvement of Qualifications of Supervisory Personnel and Specialists within the system of RSFSR Ministry of Procurements, using the Ramen'skoye and Kiev milling plants as facilities for production training.

The CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee have adopted a decree entitled "On All-Union Socialist Competition for Successful Fulfillment and Overfulfillment of the Assignments of the 11th Five-Year Plan." It is the task of the procurements ministries of the union republics to stage socialist competition on a broad basis at enterprises and organizations and to ensure successful fulfillment of the assignments of the current 5-year period.

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POST-HARVEST CROP PROCESSING

PREPARATIONS FOR NEW GRAIN HARVEST UNDER WAY

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 16 Jun 81 p 1

[Article by Grigoriy Sergeyevich Zolotukhin, USSR minister of procurement and delegate to the 26th CPSU Congress: "According to the Schedule of the Harvest Campaign"]

[Text] In KOMSOMOL'SKAYA PRAVDA I read with great interest the socialist obligations of the Komsomol young women's tractor team of the "Rassvet" Kolkhoz in Millerovskiy Rayon in Rostovskaya Oblast, which resolved to achieve stable and high yields in every year of the upcoming 5-year period. This is a very important and timely initiative! Especially if we take into account the circumstance emphasized by the initiators themselves: There is no such thing as bad weather in nature. In other words, the people from Millerovskiy Rayon are boldly going to meet all possible trials on behalf of the harvest. And it is gratifying that their initiative has received the necessary support from everyone on whom the fate of the harvest depends: workers of the Sel'khoztekhnika association, assemblers of the Rostsel'mash Plant, and drivers of the trucking production association....

The entire harvest that is raised: grain, animal feed, vegetables and fruit--represents our national property, the end result of the work of thousands of people; we must get it into the grain bins and storage facilities; it must all be preserved. "... It is difficult to imagine an efficient agroindustrial complex and a modern rural environment," Comrade L. I. Brezhnev said at the 26th CPSU Congress, "without an advanced highway network, reliable transport, elevators, storage facilities, warehouses, refrigerators and a container industry. Disorder and a lag in any of these segments inevitably have an impact on the quality and quantity of the end product."

Quite a bit was done in the last 5-year period to strengthen the technical facilities of grain-receiving enterprises: New grain-storage facilities, grain driers and other facilities were built. Over just the last 10 years the capacity of elevators has increased 2.1-fold in RSFSR, 4.5-fold in the Ukraine, 3.6-fold in Belorussia, 4.1-fold in Uzbekistan and threefold in Kazakhstan.

The elevator industry will also develop at a fast pace in the current 5-year period. The task was set at the 26th CPSU Congress of building grain elevators with a total capacity of 20 million tons and of increasing grain-drying capacity, especially in areas raising sunflowers, corn and rice. Grain-storage capacities for more than 4 million tons will be built this very year.

The harvest campaign of the first year of the 11th Five-Year Plan is approaching. Preparation of grain-receiving enterprises is to be completed by 1 July in the southern areas of the country and by 1 August in the other areas. Inspired by the decisions of the 26th CPSU Congress, collectives of grain-receiving and grain-processing enterprises have resolved to complete preparation for acceptance of the new grain harvest 10 days ahead of schedule. By 15 May 318 enterprises had already been brought to complete readiness. By 1 July repairs were completed in TaSSR, ArSSR, Krasnodarskiy Kray, Tul'skaya Oblast, and Tatarskaya, Dagestanskaya and Severo-Osetinskaya ASSR's.

Preparations of technical facilities are close to completion at enterprises in the Ukraine, Uzbekistan, Stavropol'skiy Kray, and Rostovskaya, Volgogradskaya, Bryanskaya and Voronezhskaya oblasts. Repair work is going well in Orlovskaya, Chelyabinskaya and Belgorodskaya oblasts. Collectives of grain-receiving enterprises in Poltavskaya Oblast were initiators of a socialist competition and completed repair work ahead of schedule, 2 months ahead of schedule.

The party and government are displaying unstinting concern about the preservation of grain. This year additional funds will be allocated to develop the technical facilities of grain-receiving enterprises, which will make it possible to put into operation 125 grain driers with a total capacity of 4,000 tons per hour, 4,000 square meters of paved yards, 1,000 large-load truck unloaders, and other facilities necessary to preserving the grain.

Particular attention is being paid to full mechanization, which substantially speeds up the acceptance, weighing and unloading of grain from the large trucks and truck trailers.

The forms and methods of coordinated organization of harvesting, transport and procurement efforts, from the field to the elevator, have been undergoing development for many years now. During the last harvest campaign the grain was carried from threshing floors to elevators in accordance with hour-by-hour schedules in 596 rayons. For example, delivery of grain was managed on a centralized basis in accordance with day-by-day schedules in 23 grain products administrations and at 273 grain-receiving enterprises in 207 rayons. Nearly half of the harvest was shipped according to hour-by-hour schedules worked out on computers. Shipment of the grain was organized with particular skill in Saratovskaya Oblast, which made it possible to reduce the procurement period by 3-5 days and to reduce the need for trucks and trailers by 30 percent.

Last year 482 motor transport crews worked on a centralized basis in 20 rayons, and 367 teams of drivers worked according to the method of the work-team contract. The economic benefit was 237,000 rubles at grain-receiving enterprises in the kray alone.

There has been valuable experience in the shipment of grain by hourly schedules in KaSSR as well. For a number of years now the republic has been selling the state more than 1 billion poods of grain. In 1980 flowcharts for receiving, placement and processing of grain were compiled at 433 grain-receiving enterprises. At 155 grain-receiving enterprises hourly schedules for moving the harvest from the threshing floors of sovkhozes and kolkhozes were drafted jointly with trucking organizations.

Summarizing the effectiveness of the comprehensive system for moving grain according to hourly schedules, we can say that its use makes it possible to increase the daily load carried per truck by an average of 25 percent. The receiving capability of grain-receiving enterprises is increased 20 percent by their operating around the clock, which is equivalent to reducing the grain procurement period by 3-6 days.

We should emphasize that all grain-receiving enterprises in the country can receive grain around the clock and according to schedules. But for many years the shipment of grain has not been organized according to hourly schedules in Omskaya and Novosibirskaya oblasts and Krasnoyarskiy Kray. There is still time to organize this system for moving the harvest everywhere.

State storage facilities are not the only reliable grain bins. Others are kolkhoz threshing floors, driers, yards and warehouses. What shape are they in, are they ready to receive the new harvest, have access roads been built to them, do they have tarpaulins around them for trucks? These and many other questions deserve the most fixed attention of all those who are sharing in the harvest. I would like to address Komsomol workers, "searchlight operators." Past years have shown that in many Komsomol committees good know-how has been developed in skillfully and strictly monitoring the shipment and procurement of the harvest. All the harvest routes and grain-receiving enterprises should this time be under the attentive eye of the young harvest patrols once again.

7045
CSO: 1824/362

IMPROVEMENTS IN UTILIZATION OF TURKMEN WATER RESOURCES REQUIRED

Ashkhabad SEL'SKOYE KHOZYAYSTVO TURKMENISTANA in Russian No 5, May 81 pp 28-30

[Article by R.I. Kovalenko, candidate of technical sciences and head of the Laboratory of Water Problems at the Turkmen Scientific Research Institute of Hydraulic Engineering and Reclamation and Kh. Aidov, candidate of technical sciences and senior scientific worker in the above laboratory: "Reserve of Water Resources in the Turkmen SSR"]

[Text] Our country is one of the world's leaders in terms of available water resources. On the average, the total amount of runoff from all of its rivers amounts to roughly 4,700 cubic kilometers annually. For all practical purposes, this supply is sufficient for an indefinite period of time. However, these resources are distributed extremely irregularly throughout the territory of the Soviet Union. In many southern regions of the country, the supplies of fresh water have been exhausted to a considerable degree as far as local requirements are concerned and mainly with regard to irrigation. The further development of irrigation farming, the branches of industry and the municipal economy requires that these supplies be augmented through the diversion of fresh water from areas having an abundance of such water, particularly from Siberia.

The problem of diverting a portion of the runoff of Siberian rivers has been reflected in decisions handed down during the 25th and 26th CPSU Congresses. The Basic Directions for Developing the National Economy of the USSR During the 1976-1980 Period called for the "carrying out of scientific studies and the implementation on this basis of planning developments associated with the problem of diverting a portion of the runoff of the Siberian and northern rivers into Central Asia, Kazakhstan and the Volga River Basin"; for the 1981-1985 period and for the period up to 1990 -- "the carrying out of preparatory work for diverting a portion of the runoff from northern rivers into the Volga River Basin and also the continuation of scientific and planning works aimed at diverting the waters of Siberian rivers into Central Asia and Kazakhstan."

According to official estimates, the waters of the Siberian rivers will reach the arid regions of Turkmenistan no earlier than the year 2000. What will be the extent of these water resources? What will be the water requirements of branches of the national economy, taking into account the prospects for their development? Is a water shortage expected prior to the arrival of the Siberian water and if so, when, what will be the extent of such a shortage and what water resources will be employed for compensating for it?

In the Turkmen SSR, the principal sources for irrigation and water supply are rivers, springs, horizontal underground water sources and also collector-drainage and underground waters of weak mineralization.

According to the Kerki Hydraulic Engineering Station, the runoff from the Amu-Dar'ya River (average over a period of many years) is 50 billion cubic meters. The Turkmen SSR accounts for 50 percent or 25 billion cubic meters of water annually. The annual runoff from the Murgab, Tedzhen and Atrek rivers, small streams, springs, horizontal underground water sources and wells is 2.5 billion cubic meters. Future plans call for the use in the national economy of weak mineralized collector-drainage and underground waters, the overall annual supplies of which are 1.2 billion and 568 million cubic meters of water respectively. Thus the overall annual supply from water sources in our republic amounts to 29.3 cubic kilometers annually. During this modern stage, the total amount of water consumption by the republic's national economic branches is 20.0 cubic kilometers annually. Of this amount, more than 17 cubic kilometers is used for irrigation.

A computation based upon data on the areas for future irrigation in the Turkmen SSR and the recommendations of Turkmengiprovodkhoz and Uzgiprovodkhoz with regard to the KPD [efficiency factor] for canals and irrigation norms reveals that the water requirements for the irrigation of agricultural crops will increase from 17.2 cubic kilometers annually in 1980 to 40.0 cubic kilometers annually by the year 2000 (see Table 1).

Table 1

Water Consumption in Turkmen SSR For Irrigation

Years	Area of Irrigation, thousands of hectares	Irrigation Norm, cubic meters per hectare	KPD for Irrigation Systems	Water Intake From Sources, millions of cubic meters
1980	937	12000	0.60*	17200
1985	1150	12000	061.	21275
1990	1710	12000	0.70	29070
2000	2500	11200	0.74	40000

* The actual weighted mean KPD for irrigation systems in the TuSSR at the level for 1980.

The water requirements of enterprises of industry and the municipal economy are determined based upon the materials of planning organs, concerning the modern status and prospects for the development and distribution of industry, cities, settlements of the municipal type and areas for the mass recreation of workers, taking into account growth in the size of the population by oblasts and the republic on the whole. In accordance with the construction norms for planning water consumption for household-drinking water and municipal requirements of the populations of cities, 600 liters daily were expended per capita in 1980 by industry, construction and transport for the watering of streets and green plantings. This indicator will increase in the future: in 1990, to 650 liters daily and in the year 2000 -- to 700 liters daily. Taking into account the republic's entire population, the consumption of water by industry and the municipal economy in 1990 will be 893 and in the year 2000 -- 1.25 million cubic meters, compared to only 632 million cubic meters in 1980.

It is apparent from the data furnished in the table that the water requirements of the national economic branches of the Turkmen SSR will have increased by the year 2000 by a factor of 2.3 over the figure for 1980 and amount to 40.0 billion cubic meters annually. According to computational data, the republic's existing supplies of water resources are adequate until 1988 and in 1989 a water shortage will develop. By the year 2000, that is, prior to the arrival of water from the Siberian rivers on the territory of the Turkmen SSR, the extent of the water shortage will amount to 13.9 cubic kilometers.

The surface runoff formed by rivers, streams, springs, horizontal underground water sources and other sources on the territory of the Turkmen SSR is presently being taken into account and is not expected to increase in the future. It would be wrong to expect an increase in the runoff of collector-drainage waters that are suitable for irrigation and water supply, since as an increase takes place in the length of the collector-drainage network over the next few years the irrigation norms will decrease and by 1990 will be lower than the existing norms by a factor of 1.5-2.0. In other words, stability can be expected in the foreseeable future in the runoff of collector-drainage waters, or an inconsequential change towards either an increase or decrease in it.

According to data supplied by the Geological Administration for the TuSSR, the confirmed operational supplies of underground waters in Turkmenia amount to 568.21 million cubic meters annually and over the past 10 years their average annual increase was 8.9 million cubic meters. This amount of increase in the republic's overall balance is not very great and over a period of 15-20 years will amount roughly to 150-200 million cubic meters annually and this will make it possible to compensate for the water shortage in 1990 by 9.7 percent and in the year 2000 -- by only 1.5 percent (for shortages respectively of 2.02 and 13.93 cubic kilometers).

Such measures as regulating the water runoff in reservoirs, the distillation of sea and ground mineralized waters at individual enterprises throughout the republic and others will not exert a substantial effect on compensating for the water shortage.

The absence of obvious additional water sources for compensating for the republic's water shortage during the 1990-2000 period, raises the need for resorting to the use of technical measures. The modernization of the irrigation and flooding systems and, in particular, alignment of the beds, the installation of anti-filtration linings for canals, the use of chutes, pipelines and flexible hoses and other measures will serve to raise the KPD of the network to 0.85-0.95. Raising the existing KPD values for canals to the indicated amounts and also the use of scientifically sound optimum irrigation norms and equipment for watering the agricultural crops will make it possible to prevent the loss of 9-12 cubic kilometers of water annually, that is, an amount which would be fully adequate for compensating for the water shortage.

Computations reveal that in order to compensate for the shortage in water resources in the TuSSR during the 1990-2000 period, the KPD for the irrigation systems must be: in 1990 -- no lower than 0.76, in 1995 -- 0.80, in 1998 -- 0.83, in 1999 -- 0.88 and in the year 2000 -- 0.93.

We are of the opinion that projects for the immediate modernization of irrigation systems must include those systems having the lowest values for the KPD's of canals, the improvement of which from a technical standpoint will produce an immediate and noticeable economic effect. In the Turkmen SSR, such systems include the systems

Kunya-Urgenchskiy, Takhtinskiy and Oktyabr'skiy Rayons in Tashauzskaya Oblast; Dargan-Atinskiy and Sayatskiy Rayons in Chardzhouskaya Oblast and Serakhskiy and Tedzhenskiy Rayons in Ashkhabadskaya Oblast. The irrigation networks of the Sovkhoz imeni Zhdanov and the Pobeda Kolkhoz in Tedzhenskiy Rayon, the Leninizm and Bol'shevik Kolkhozes in Serakhskiy Rayon, the Kommunizm and Komsomol Kolkhozes in Kaakhkinskiy Rayon and the Moskva Kolkhoz in Bakhardenskiy Rayon are in need of immediate modernization.

When establishing the priorities for the modernization of hydraulic engineering land reclamation projects, consideration must also be given to the availability of bases for carrying out the required complex of reconstruction work, to the quality of the irrigated lands and to other indicators.

Thorough modernization of the irrigation systems in the Turkmen SSR will make it possible not only to reduce substantially the filtration losses of water from canals and to prevent a water shortage in the republic, but in addition it will improve the reclamative status of irrigated lands and achieve further improvements in the cropping power of the agricultural crops.

In addition to the principal measure -- raising the KPD for the irrigation canals -- and for the purpose of achieving economies in the use of water resources, a great amount of work must be carried out throughout the republic in the following directions:

-- improving the entire system of water usage, defining more precisely the irrigation regimes in connection with the changing hydrogeological, economic and other conditions;

-- regulating land utilization; complete rejection of the mobile system of farming and the elimination of unaccounted for areas;

-- improvements in the leaching and water supply irrigation systems: considering the irrigated fields according to their degree of salinity, observance of the leaching norms;

-- raising the KIV [koeffitsiyent ispol'zovaniya vody; coefficient of water usage];

-- introducing progressive equipment and a technology for carrying out waterings;

-- mastering crop rotation plans which promote the creation of a soil structure and a reduction in the evaporation of ground waters;

-- timely filling of reservoirs and complete utilization of their contents, reduction in evaporation from the water's surface.

Based upon the results of studies, the following conclusions can be drawn:

1. The water resource reserves in the Turkmen SSR, indluding surface, underground, drainage and other waters suitable for use in the national economy, are comparatively limited and not at all sufficient for compensating for the expected water shortage, according to our computations for the beginning of 1988.

Table 2

Water Consumption of Branches of the National Economy and Future Shortage in Water Resources in the Turkmen SSR, millions of cubic meters annually

Indicators	Years			
	1980	1985	1990	2000
Supplies of water resources	29268	29268	29268	29268
Water consumption, including	18722	23098	31288	43203
a) irrigation	17200	21275	29070	40000
b) industry and municipal economy	632	748	893	1251
c) other consumers of water (5% of a + b)	890	1075	1325	1952
Shortage in water resources	-10546	-6170	+2020	+13935

2. From the standpoint of the practical implementation of a means for augmenting the water supplies, the most efficient and most feasible method is that of protecting irrigation, drinking and technical water against losses by further improving the KPD for canals and water areas through their modernization. In order to compensate for the water shortage values which we computed, the average KPD for canals in the republic must be raised by 1988 (the commencement of the shortage) to 0.74 and by the year 2000 -- to 0.93. Such high efficiency factors are possessed by canals having exclusively concrete, reinforced concrete or concrete-film covering or consisting of reinforced concrete chutes and pipelines.

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REGIONAL DEVELOPMENT

BRIEFS

KAUSHANY GRAIN ELEVATOR DESCRIBED--The May 1981 edition of the Procurement Ministry Journal ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian carries an article on pages 21-23 from Kaushanskiy Rayon, Moldavia. In the article the chief engineer gives the following specifications pertaining to the Kaushany Elevator: "The overall capacity of our enterprise is 167,000 tons. Of this 105,000 tons is elevator capacity, the rest is warehouse. Eight DSP-32 grain dryers guarantee a productivity rate of 256 "plan" tons an hour or about 4,000 tons in 2 twenty-four hour periods. We dry grain as if on a production line. We have 15 grain reception installations: eight at the first production area, three at the second and four at the third. At each area because of remodeling of old and installation of new motor vehicle lifts we can unload grain without exception from all types of motor vehicles." [Editorial Report]

GRAIN ELEVATOR IN ZAPOROZHSKAYA OBLAST--The newspaper PRAVDA UKRAINY in Russian for 12 May 81 in a brief on page two describes the grain elevator in the settlement of Kamysh-Zarya: "....Construction has been completed on one of the largest grain elevators in the Republic with a capacity of over 130,000 tons in the settlement of Kamysh-Zarya." [Editorial Report]

CSO: 1824/322-A

AGRO-ECONOMICS AND ORGANIZATION

REPUBLIC DATA ON INTER-FARM COOPERATION, AGROINDUSTRIAL INTEGRATION

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 5, May 81 pp 11-18

[Article by V. Prosin, candidate of economic sciences and chief of the main administration of the USSR Ministry of Agriculture: "Inter-Farm Cooperation and Intensification of Production"]

[Text] One of the most important components of the complex program for developing the productive forces and reorganizing the countryside and the principal direction to be followed for developing agriculture during the modern stage is that of specialization and concentration of agricultural production based upon inter-farm cooperation and agroindustrial integration. The party, soviet and agricultural organs in the various areas have carried out and are continuing to carry out a great amount of work in this direction. Each republic, oblast and rayon, based upon specific natural conditions and economic potential, are making their own contribution towards developing the processes of inter-farm cooperation and agroindustrial integration and raising the efficiency of agricultural production.

Inter-farm cooperation presently encompasses many branches of agriculture and a number of branches which service agriculture. During the past 5 years, the number of different inter-farm and agroindustrial formations in the country increased by a factor of more than 1.5 and at the beginning of this year amounted to approximately 13,000. Almost all of the kolkhozes and more than two thirds of the sovkhozes are participants in the different forms of cooperation.

With each passing year, the inter-farm formations are playing a greater role in the production of agricultural products, rendering various types of services and performing work for the kolkhozes and sovkhozes. Today, throughout the country as a whole, more than 10 percent of all meat produced in the public sector and almost 13.8 percent of all mixed feed are being produced on the basis of inter-farm cooperation; inter-farm construction organizations are carrying out more than 40 percent of the entire volume of construction-installation work at kolkhozes and sovkhozes. Each year the inter-farm enterprises (excluding construction enterprises) realize a profit of 500-600 million rubles, a large portion of which is distributed to the kolkhozes and sovkhozes -- participants in cooperation.

Active work is being carried out in inter-farm cooperation and agroindustrial integration in many oblasts, krays and autonomous republics of the RSFSR, in the Ukrainian SSR, Moldavian SSR, Belorussian SSR, Uzbek SSR, Lithuanian SSR and in a number of other union republics. In many republics and oblasts throughout the country, the volumes of agricultural output produced on the basis of inter-farm cooperation constitute a considerable proportion of the overall volume of such output produced in the public sector.

More than 6,000 different inter-farm formations are in operation in the Russian Federation. The average annual value of the gross agricultural output produced by them and of the services rendered by them, for the republic as a whole, amounts to more than 1 billion rubles. The production capabilities of the inter-farm formations in the specialized raising of cows and heifers, for example, make it possible to raise 1.6 million heifers simultaneously. These enterprises supply the participating farms with approximately 15 percent of the heifers raised by them, for augmenting the principal herd. In 1980 the inter-farm enterprises for feed production produced 555,300 tons of feed, in a conversion to feed units, or almost 1.5 times more than the amount for 1977.

More than 3,500 inter-farm enterprises and production associations are carrying out production operations in the Ukrainian SSR based upon inter-farm cooperation. The output of such enterprises and associations and also of specialized farms, compared to the overall agricultural output volume produced in the republic's public sector is: beef -- 29 percent, pork and poultry meat -- approximately 50 percent and eggs -- 84 percent.

The production of mixed feed on an inter-farm basis was developed on an extensive scale here. Four hundred inter-farm mixed feed plants and shops were created. Six thousand kolkhozes and 550 sovkhozes invested more than 600 million rubles for their construction. In 1980 the volume of mixed feed produced at inter-farm plants (approximately 10 million tons) amounted to almost 70 percent of the overall mixed feed production in the republic.

Inter-farm cooperation is developing at a rapid tempo in the Moldavian SSR, where there are 228 inter-farm enterprises and nine scientific-production associations. In 1980, of the overall volume of products obtained at kolkhozes, they produced 82.7 percent of the pork, 69.3 percent of the beef and a considerable portion of other types of products. The successful activities of these enterprises and associations promoted a situation wherein, during the Tenth Five-Year Plan and Compared to the Ninth Five-Year Plan, the average annual level for meat production in the republic was higher by 36 percent, milk -- by 30 percent and eggs -- by 48 percent. In increasing the production volumes of animal husbandry products and raising the efficiency of this branch, a decisive role is being played by enterprises specializing in feed production. In 1980 they obtained feed, in a conversion to feed units, at the rate of 46.6 quintals per hectare. These enterprises have 41 plants at their disposal. In 1980 they produced 437 million tons of mixed feed.

In the Belorussian SSR, of the overall volume of agricultural output sold to the state by the public sector, specialized farms and inter-farm enterprises accounted for almost 33 percent of the beef, more than 40 percent of the pork and more than 70 percent of the mutton and wool. Each year the principal dairy herd of the republic's kolkhozes and sovkhozes is increased 15-20 percent by the addition of heifers and first heifers, raised on the basis of inter-farm cooperation. More than

60 percent of the gross harvest of grass seed is produced at specialized farms of Belsemtravob"yedineniye. Moreover, the average annual production volume for such seed during the Tenth Five-Year Plan increased by a factor of more than 1.5 over the average annual production volume for the Ninth Five-Year Plan.

In the Lithuanian SSR, further intensification of specialization, improvements in the level of production concentration and the development of inter-farm cooperation are also promoting a considerable increase in the production of goods and a strengthening of the kolkhoz and sovkhoz economies.

The operational practice of inter-farm enterprises and production associations reveals that as a rule their production-economic indicators are considerably better than those for farms which do not participate in cooperation.

For example, in 1980 the Mayak inter-farm enterprise in Voronezhskaya Oblast fattened and sold to the state 15,900 head of large-horned cattle. The average daily increase in live weight per head of cattle here was 1,007 grams and feed consumption per quintal of increase in live weight -- 6.9 quintals of feed units. The enterprise realized a profit of 3.2 million rubles, a large portion of which was distributed among the participating farms.

The Druzhba Sovkhoz in Vologodskaya Oblast, which fattens large-horned cattle based upon the principles of inter-farm cooperation, fattened 11,800 head of large horned cattle in 1979 and sold them to the state at an average weight per head of 456 kilograms. The average daily increase in live weight per animal, taking into account the maturing process, was 1,021 grams and feed consumption per quintal of increase in live weight in the cattle -- 6.3 quintals of feed units. The farm's overall profit amounted to 5.22 million rubles, of which amount 4.33 million rubles were earned in the form of bonuses for the sale of improved quality cattle.

The Mir Sovkhoz in Brestskaya Oblast, which performs a similar function, sold 10,300 head of large-horned cattle to the state in 1980 at a live weight per head of 460 kilograms. The average daily increase in live weight per head of cattle during fattening was 1,197 grams and feed consumption per quintal of increase in live weight -- 5.4 quintals of feed units. The production cost per quintal of increase in live weight -- 101.6 rubles. A profit of 4.4 million rubles was realized from the sale of the cattle.

Fine results are being achieved by an inter-farm enterprise for the fattening of swine in Shirvintskiy Rayon in the Lithuanian SSR; it is fattening 22,200 head annually. In 1980 the enterprise produced 27,500 quintals of meat, which amounted to more than 65 percent of the overall volume of meat production in the rayon's public sector. The average daily increase in live weight per swine was raised here to 621 grams and feed consumption per quintal of increase in live weight -- 5.4 quintals of feed units. The enterprise realized a profit of 1.7 million rubles. As a result of the work of this enterprise over a period of 7 years, pork production increased by more than twofold, labor productivity in swine raising increased by 40 percent and feed consumption per quintal of increase in live weight decreased by 16 percent.

A decisive factor for raising the efficiency of animal husbandry production on an inter-farm basis is that of ensuring that the animals are supplied with adequate amounts of highly nutritious feed. This problem has been solved correctly by the Kolkhoz imeni Uritskiy in Gomel'skaya Oblast, which fattens cattle for 17 kolkhozes -- participants in cooperation -- based upon internally produced feed. The kolkhoz has been completely released from having to produce other types of marketable products, the procurement plans for which are being carried out by the participants in cooperation. Here, at an inter-farm complex, 11,000 head of large-horned cattle are being fattened simultaneously. As a result of having raised the cropping power of the forage crops and making extensive use of repeated sowings, the kolkhoz is satisfying completely the feed requirements of the livestock. Under the unfavorable weather conditions experienced during 1979 and in a conversion for feed units, an average of 52 quintals of feed was obtained per hectare of agricultural land (3,957 hectares in all) and from irrigated land -- 100 quintals per hectare.

During the years of the Tenth Five-Year Plan, the farm sold more than 13,000 tons of meat to the state in fulfillment of the plans of the participating farms. In the process, the feed consumption per quintal of live weight increase in the cattle was 7.5 quintals of feed units and the production cost per quintal of increase in live weight -- 129.57 rubles. A profit of more than 13.5 million rubles was realized from the sale of the beef, of which amount 6.8 million rubles were distributed among the other farms participating in cooperation. The expenditures incurred for the modernization of old and the construction of new animal husbandry facilities were repaid within three years.

For the Eleventh Five-Year Plan, the farm adopted socialist obligations aimed at achieving the best operational indicators. The obligations were approved by the Board of the USSR Ministry of Agriculture and the Presidium of the Central Committee of the Professional Trade Union for Agricultural Workers. The plans call for the average annual number of young large-horned cattle stock to be increased to 13,000 by the end of the five-year plan, for the average daily increase in live weight per head of cattle, for the entire technological cycle including maturing, to be raised to 950-1,000 grams and for cattle weighing more than 500 kilograms to be removed from the fattening regime. In order to carry out this production program, no less than 80 quintals of feed, in a conversion for feed units, must be obtained from each hectare of agricultural land.

Inter-farm cooperation in the sphere of providing services for agriculture must be developed more extensively throughout the country. At the beginning of this year there were more than 2,000 inter-farm enterprises and organizations rendering such services. During 1980 alone, they performed work and rendered various types of services valued at almost 950 million rubles.

The creation of inter-farm enterprises and associations for the technical servicing and utilization of agricultural equipment and power engineering facilities is opening up great prospects for the future. For example, in 1980 the inter-farm production-operations enterprises of Sel'khozenergo carried out 300 million rubles worth of work, or four times more than during 1975.

The inter-farm enterprise in Lyubinskiy Rayon in Omskaya Oblast is in its seventh year of operation. In 1980, it provided services to farms in the rayon valued at approximately 550,000 rubles. With the introduction into operations by this enterprise of a system of planned-preventive repair work at the kolkhozes and sovkhozes, considerable improvements were realized in the technical condition and operational reliability of electrical installations. Thus, for farms throughout the rayon on the whole, breakdowns in the operation of electric motors do not exceed 1.5 percent, whereas the figure is ten times greater for farms throughout the oblast which have not adopted complex technical servicing.

In the Moldavian SSR, inter-farm enterprises for the mechanization and electrification of agricultural production, in providing services for the republic's kolkhozes, are carrying out for them 93 percent of the entire volume of mechanized work being performed on the farms; they are watering 70 percent of their irrigated lands and they are applying to the kolkhoz fields 80 percent of the entire amount of organic and 70 percent of the mineral fertilizers being employed here.

The concentration of equipment is promoting a reduction in the schedules established for the carrying out of work and it is improving the quality of the work and increasing the efficiency of use of the machines. In the process, the daily output per tractor and the labor productivity of the machine operators are increasing, fuel consumption per standard hectare is decreasing and the production cost per unit of mechanized work is also decreasing. This is making it possible to realize a savings of more than 10 million rubles annually in carrying out the entire volume of mechanized work at the kolkhozes and sovkhozes.

In 1980, in 87 rayons throughout the country, including all rayons in Stavropol'skiy Kray in the RSFSR and Mogilevskaya Oblast in the Belorussian SSR, an experiment was carried out on the utilization of the agricultural equipment of kolkhozes, sovkhozes and enterprises of Goskomsel'khoztekhnika, based upon cooperation in the use of the equipment, in the resources used for repairing it and in technical services. This experiment, in addition to revealing the many advantages of this form of equipment and machine usage, also underscored the need and methods for improving the agricultural engineering service.

The processes of agroindustrial integration are developing more and more throughout the country. The production and processing of agricultural products and their storage and sale in fresh and processed forms are being combined. This is making it possible to increase production considerably, to reduce losses and to improve the quality of the fruit and vegetables and other highly perishable products. In 1979 the agroindustrial enterprises and auxiliary departments of kolkhozes and sovkhozes throughout the country produced 1,047 mubs of canned vegetables, fruit and juices, 38 million decaliters of wine and wine materials, 10,600 tons of dried fruit, vegetables and potatoes, 53,900 tons of vegetable oil and other products derived from the processing of agricultural raw materials, with the total value for all of the above being in excess of 6.8 billion rubles.

In the Georgian SSR, an agroindustrial-trade association of the republic's Ministry of Agriculture has been operating since 1975 in accordance with the principle "field to store." The association includes 61 sovkhozes, 6 self-service stores, 242 specialized stores, 4 canning plants, a storehouse for 77,500 fruits, vegetables and potatoes and two motor transport enterprises. Production concentration and specialization, improvements in the culture of farming and the elimination of departmental barriers have enabled the association to increase production considerably, raise the marketability of the products and to reduce product losses during sales. During 1979, 160,000 tons of vegetables and 81,700 tons of potatoes were sold to the state. The association supplied the all-union fund with 42,800 tons of early potatoes and 31,600 tons of early vegetables. The proportions for potatoes and vegetables sold by the association, compared to the state procurements of these products in the republic's public sector, were 45 and 60 percent respectively.

A similar agroindustrial trade association has been created in Stavropol'skiy Kray. It includes 71 vegetable growing sovkhozes, 2 sovkhoz-plants having an overall productivity of 110 mubs of canning products annually, 235 specialized stores and trade points with an overall turnover of goods valued at 47.3 million rubles, three motor transport enterprises and two zonal associations. The combining of the production, procurement and sale of fruits and vegetables under one economic management has made it possible to improve the supply of these products to the population and to those vacationing at resorts in the kray.

Similar associations have been created in Kuybyshevskaya, Odesskaya and Gomel'skaya Oblasts and in the Checheno-Ingushskaya ASSR.

The operational experience accumulated here and at a number of other associations reveals that the new form for organizing the production and sale of fruit and vegetable products warrants broad dissemination. However, despite the positive results achieved, there are still many shortcomings and unresolved problems. The processes of inter-farm cooperation and agroindustrial integration in the Kazakh SSR, Kirgiz SSR, Armenian SSR and in a number of oblasts in the Volga region, Siberia and the nonchernozem zone of the RSFSR are being developed slowly. In many instances, haste is being displayed in the creation of the inter-farm enterprises and production associations; they are being formed in the absence of sufficient economic justification or a preliminary determination of their effectiveness.

Many examples could be cited showing how the relationships between the inter-farm enterprises and participating farms are not being developed on a mutually advantageous cost accounting basis and with an unequal exchange of operational results. And this applies mainly to many farms within the RSFSR Skotoprom [Cattle Industry] System.

In a number of oblasts in the RSFSR, the Kazakh SSR, Kirgiz SSR, Uzbek SSR, Moldavian SSR and some other republics and during the course of organizing animal husbandry inter-farm formations, solutions are not being found for those problems concerned with ensuring that the cattle are completely supplied with internally produced feed, enterprises specializing in the production of feed are not being created on an inter-farm basis and the participating farms are not fulfilling their contractual obligations for supplying feed to those inter-farm enterprises engaged in fattening their cattle. The land areas available to those inter-farm formations engaged in the production of animal husbandry products are not being utilized fully for the production of feed.

All of these shortcomings are serving only to lower the operational effectiveness of a number of inter-farm formations. Many of these formations, in terms of their activities, are not exerting a positive influence with regard to strengthening the kolkhoz and sovkhoz economies, increasing the production of goods or developing the respective branches of agriculture on the whole for the rayon, oblast, kray or republic.

The economic relationships between the kolkhozes, sovkhozes and inter-farm enterprises in the sphere of services require further improvements. They must be developed in a manner such that the work performed for the participating farms or the services provided for them are in keeping with the established tasks, that is, the work and services are performed in a high quality manner and on a timely basis and involve less cost to the farms than prior to cooperation. It would be most correct to establish accounting prices for the work performed or services rendered which would provide the inter-farm enterprises in the sphere of services with the minimal profit required by them for creating their economic incentive funds. If the actual expenditures for carrying out the established volume of work turn out to be less than those planned and the inter-farm enterprise is to receive more profit than planned, then in accordance with a decision handed down by the council, the above-plan profit is distributed among the participating farms. For example, an inter-farm enterprise for servicing the irrigated lands of kolkhozes and sovkhozes in Balakovskiy Rayon in Saratovskaya Oblast returned 450,000 rubles to the farms participating in cooperation -- this represented the total amount of above-plan profit obtained during 1978.

The relationships between those participating in cooperation in the sphere of services can be developed on a planned non-profit basis. In such a case, the economic incentive funds are created by increasing the planned expenses in the principal production operations. At the same time, we cannot recognize as normal those relationships wherein the inter-farm enterprises, as a result of having performed certain services for the participating farms, obtain unjustifiably high profits while the participating farms either sustain losses or realize only negligible profit. For example, in 1978 the Cherepovets Sel'khozenergo inter-farm enterprise (Vologodskaya Oblast), as a result of having inflated its rates for services, obtained a profit of 382,000 rubles, thus achieving a profitability level of 36.1 percent. Such relationships can hardly be considered economically sound.

In this regard, approval should be given to the decision handed down by the Council of the Altayskiy Kraysel'khozenergo Association concerning a reduction in the rates for services rendered by its enterprises to the kolkhozes and sovkhozes. For the kray as a whole, this would produce a reduction in expenditures for the payment for such services of almost 1 million rubles annually.

One task requiring an urgent solution is that of developing a system of organizational-economic measures aimed at raising the economic efficiency of production operations within inter-farm and agroindustrial formations and intensifying the role and influence of integrated formations upon the overall economic results of all of the kolkhozes and sovkhozes participating in cooperation. Improvements must be achieved in the management mechanism and, in particular, the system of planning, financing and the issuing of credit must be standardized. A requirement exists for developing standard tables of organization and official norms for the various inter-farm formations, since in many instances an unjustified increase in the number of administrative personnel is being tolerated during the creation of new inter-farm enterprises and production associations, the expenses for maintaining the administration are increasing and this lowers the efficiency of cooperation.

Solutions are still lacking for many problems associated with the development of agroindustrial integration throughout the country. Here a requirement exists first of all for undertaking the organizational-technical measures required for ensuring the preservation of all agricultural products produced, for achieving a considerable reduction in the time and number of instances for the products being moved from the producer to the consumer and for improving or retaining the high initial quality of the products.

It is known that in past years, during the period of mass procurements of fruit and vegetable products, a portion of this output grown by the kolkhozes and sovkhozes quite often did not find a market, it would lose its marketable appearance, spoil and, at best, be used only for cattle feed. On the average for 1979 and 1980 alone, according to incomplete data, more than 1.5 million tons of vegetables, melons and fruit were fed to the livestock at kolkhozes and sovkhozes, despite the fact that an overall shortage of these products was being experienced throughout the country at the time. The procurement, processing and trade organizations are not devoting adequate attention to ensuring the procurement of vegetables and fruit for the future or to their storage and preservation. As a result, during the fall-winter and spring periods, disruptions occurred in the trade in these products.

The party and government are undertaking measures aimed at eliminating these and other shortcomings and further increasing the production and improving the quality of the fruit and vegetable output. In the "Basic Directions for the Economic and Social Development of the USSR During the 1981-1985 Period and For the Period Up To 1990," the task has been established of improving the organization of the production, procurement, storage, processing and sale of fruit and vegetable products and potatoes and increasing the construction of refrigerators, storehouses, receiving-procurement points, processing enterprises and shops, particularly in the production areas for the fruit and vegetable products. The USSR Ministry of the Fruit and Vegetable Economy was formed at the beginning of this year. This ministry is responsible for implementing uniform technical policies throughout the country in connection with the production, procurement, processing, storage and sale of fruit and vegetable products and table varieties of grapes and potatoes. A single management for all of these elements will make it possible to solve more efficiently those problems associated with the development and improved efficiency of agroindustrial integration in vegetable growing, horticulture and viniculture and it will satisfy more completely the population's requirements for food products.

Agroindustrial integration is undergoing development in other branches of agriculture. For the correct determination of the direction to be followed for developing a particular process, for selecting the organizational forms and for working out the relationships between the enterprises attached to agroindustrial associations, great importance is attached to the carrying out of extensive experiments. Towards this end, the USSR Ministry of Agriculture, jointly with the USSR Ministry of the Food Industry and by way of an experiment, is creating four agroindustrial associations for the production and processing of sugar beets on an interdepartmental basis in various natural-economic regions throughout the country: in Anninskiy Rayon, Voronezhskaya Oblast in the RSFSR, Yampol'skiy Rayon, Vinnitskaya Oblast in the Ukrainian SSR, Skidel'skiy Rayon, Grodnenskaya Oblast in the Belorussian SSR and in Faleshtskiy Rayon in the Moldavian SSR. The activities of the mentioned associations are being developed based upon the "Statute on an Experimental

Agroindustrial Association for the Production and Processing of Sugar Beets," approved by the USSR Ministry of Agriculture and the USSR Ministry of the Food Industry by agreement with USSR Gosplan, USSR Goskomtrud [State Committee of the USSR Council of Ministers for Labor and Wages], USSR Goskomtsen [State Price Committee] and the USSR Ministry of Finances.

An agroindustrial enterprise for the preparation of sunflower seed for sowing was also created by way of an experiment in Uychinskiy Rayon in Namanganskaya Oblast in the Uzbek SSR.

It is obvious that the results of these experiments must be studied thoroughly, summarized and, following the necessary corrections, recommended for dissemination on an extensive scale.

An extremely vital and important problem is that of improving the system for controlling agriculture under conditions involving further development of production specialization and concentration based upon inter-farm cooperation and agroindustrial integration. During the past few years, in addition to the existing territorial organs, the branch organs for controlling agriculture underwent considerable development. They are playing a great and positive role in solving those inter-oblast and inter-republic problems associated with the development of pedigree animal husbandry, seed production and other problems connected with the implementation of a uniform technical policy in agriculture. At the same time, branch organs are being created in a number of republics for controlling those sovkhozes engaged in producing marketable products. The mentioned sovkhozes are being removed from subordination to the territorial organs as specialized installations and in reality many of them are just such multi-branch elements, such as those which remain subordinate to the rayon and oblast agricultural administrations. This leads to a separation of management, to duplication of administrative functions and to an increase in the size of the administrative apparatus and in the expenditures for maintaining it.

The removal of multi-branch sovkhozes from subordination to the rayon agricultural administrations leads to considerable complications when carrying out measures for the complex development of production and for solving socio-economic tasks. In addition, it causes many discrepancies in the planning and organizing of production and growth in planning and reporting documentation. All of these factors serve to create great and unnecessary difficulties in the organization of control and they divert the specialists attached to farms and the rayon agricultural administrations from carrying out specific organizational work associated with the management of sovkhoz and kolkhoz production.

At the present time, in order to carry out the task of ensuring that the country is supplied with the necessary products, a requirement exists for improving considerably the use of the potential available at all of the kolkhozes and sovkhozes, by means of inter-farm cooperation, specialization and concentration of their production and further improvements in controlling them through a proper combination of branch and territorial principles.

Operational experience reveals that a further and accelerated build-up in the production of agricultural products, in agricultural intensification and in specialization and concentration based upon inter-farm cooperation and agroindustrial integration can be achieved successfully under conditions involving a single and unified rayon and oblast agroindustrial complex, where its balanced and proportional development is ensured under the direction of local agricultural, soviet and party organs.

Activation of the work being performed by the respective ministries and departments and also the economic science, in solving the many problems and especially those associated with implementing inter-farm cooperation and agroindustrial integration throughout the country will promote the further successful development of agriculture and fulfillment of the planned food program.

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HIGHER QUALITY, PRODUCTION OF REFRIGERATED TRUCKS NEEDED

Liquid Nitrogen Research

Kiev PRAVDA UKRAINY in Russian 12 Jul 81 p 2

/Article by B. Verkin, director of the Physico-Technical Institute of Low Temperatures of the UkSSR Academy of Sciences, academician of the UkSSR Academy of Sciences, and USSR and UkSSR state prize winner: "The Functions of Liquid Nitrogen"/

> /Text/ The refrigerated truck of peaches arrived at its destination, leaving the road from the orchards of the south far behind. Inspectors of the base opened the doors of the truck and saw... No, not beautiful fruit, but something quite different: the delicate fruit did not survive the trip...

Unfortunately, a situation such as this is not so infrequent—even when a Freon refrigerating plant is in good working order. When succulent fruit which is meant for people's tables perishes, it means that the labor of those who grew the crop also has been wasted.

The struggle against losses has been discussed from the lofty platform of the 26th CPSU Congress. How can these losses be avoided? Dependable transportation, storage facilities and refrigerators are necessary for efficient operation of the agro-industrial complex, it was emphasized at the congress. Freon and other traditional cold storage plants cannot fully meet our needs today. More efficient processing methods and equipment for storing food products are needed. Liquid nitrogen, which has a temperature of minus 196 degrees Celsius, can help. The outlook for its use is corroborated by both domestic scientific and technical studies and foreign data: a number of countries already are making use of quick-freezing plants which operate on liquid nitrogen, refrigerated railway cars and trucks which operate with nitrogen cooling, and nitrogen-dispensing stations.

A great deal also has been done in this area by the Physico-Technical Institute of Low Temperatures (FTINT) of the UkSSR Academy of Sciences, which always closely coordinates its research with important requirements in practice. A conspicuous place in our basic and applied research is held by the solution of scientific, technical, organizational and certain other problems related to increasing the production of liquid nitrogen and improving the effectiveness of its use for various objectives, primarily for refrigerating perishable products.

Nitrogen cooling systems for refrigerated trucks with a carrying capacity of 1.5 to 10 tons have been developed at the institute. They have proved to be excellent for shipping peaches, grapes, strawberries, tomatoes, cherries and other fruits, vegetables and berries from Moldavia, the Crimea and the Kuban to Moscow and Leningrad, decisively superior in comparative tests with the usual refrigerated trucks equipped with Freon-cooled compressors. The nitrogen system, which is very simple in design, provides an inert atmosphere in the truck and quickly cools fruits and vegetables immediately after they are loaded at the places they are harvested. Control of the system is automated; different temperature regimes can be established and maintained from the cab of the vehicle.

The system should be economical. In putting our research efforts into practice, we attach considerable importance to the record of their economic effectiveness. For example, in test shipments of peaches, the economic gains exceeded 200 rubles for each ton of fruit, that is, more than 2,000 rubles in just one trip of a 10-ton refrigerated truck. It has been estimated that introduction of nitrogen cooling equipment for perishable fruit shipments from just Moldavia and the Kuban will save over 3 million rubles annually. And the figures will be significantly higher on a national scale.

Liquid nitrogen systems have been developed not only for interurban shipments but for those within cities as well. Our institute provided the "NAST-1" system for ten 1.5-ton vans in which the Khar'kov Meat Combine ships meat, sausages, meat convenience foods, and cooking products to stores. On such trips around the city the trucks stop at stores frequently, and warm air goes into the truck body during unloading. The Freon cold storage plant of ordinary vans is not able to reduce the temperature in the body again before stopping at the next shop, while the nitrogen system copes with this excellently.

A modified version of a van with a nitrogen cold storage system also has been built for shipping milk and dairy products within cities. Experimental models of the "NAST-2" system for 5-ton refrigerated trucks have been tested successfully.

In all, the FTINT has converted 24 vehicles for nitrogen cold storage systems. Their economy has been proved in practice, even at the present cost of liquid nitrogen. But of course, the quantity of such equipment is obviously inadequate, and the work must be shifted to an industrial basis. I would remind you that overall development of the refrigeration industry and expansion of the use of artificial cooling in processing and storing agricultural produce has been stipulated in the Basic Trends, approved by the 26th CPSU Congress.

The success of shipments is not promoted at all by the fact that, in the chain of delivery of such perishable products as, say, fruits or vegetables, there is at present no single boss who bears responsibility for the quality of fruit transported over the entire route from the harvest to the shops. The kolkhoz or sovkhoz loads the refrigerated trucks and seals them. Transport workers deliver the cargo as assigned. But the consignees--the trade workers--find the fruit in deplorable condition when they break the seals. For this reason, the best method of eliminating departmental dissociation must be found and, as the 26th CPSU Congress decisions require, improvement in economic links among sectors, organization of their efficient interaction in raising the production of agricultural output, and improvement in its preservation, transportation, processing and delivery to the consumer must be ensured.

Further expansion of the variety and improvement in the quality of fish products also has been stipulated by the Basic Trends. Our institute is proposing long-term research in this regard--an independently functioning container with nitrogen cooling for the storage and shipment of fish, which has been successfully tested at sea on ships of the Azcherryba /Fishing Industry of the Azov Sea and Black Sea Main Administration/.

Here is just one example showing the effectiveness of such containers. Everyone is familiar with the canned goods called "sprats." The catch of this fish in the Baltic basin has decreased, and fish-canning plants have begun to become aware of the lack of raw material. There are quite a few such fish in the Black Sea, but being unusually delicate, the spoil quickly and are practically untransportable under ordinary circumstances. But by being refrigerated in a nitrogen container, the Black Sea sprat retains its palatability for 10 days--and longer several times--than when it is stored the traditional way in ice.

I would particularly like to mention the important problems connected with the necessity of increasing the production of liquid nitrogen. Our institute's initiative has received support, and specific steps have been taken to accelerate assimilation of the achievements of the physics and technology of low temperatures in the national economy of the Ukrainian SSR. In particular, the Yenakiyevo and Kommunarsk Metallurgical Plants have been engaged in by-product production of liquid nitrogen in their air-fractionating installations. Previously in compressing and fractionating air, the metallurgists used oxygen and released the nitrogen they did not need into the atmosphere. Now they have begun to compress nitrogen as well; essentially, an enterprise has not required additional capital investment, and the liquefaction costs less than at specialized nitrogen stations.

If the experience is adopted by all enterprises of the UkSSR Ministry of Ferrous Metallurgy, the republic's requirements for liquid nitrogen can be met in full. It is expedient to make the valuable undertaking of the Yenakiyevo and Kommunarsk workers widely known at ferrous metallurgy plants in other parts of the country as well.

Increasing the production of liquid nitrogen gives rise to problems in storing and shipping it. Specialized transport for liquefied gases and depositories for them are being turned out in series production by domestic industry; for this reason, we hope that the UkSSR Gosplan will help to effectively resolve these problems.

Operations to increase production of liquid nitrogen in the Ukraine and to develop efficient nitrogen cooling systems for refrigerated transport have been included in the "Agrokompleks" overall special-purpose program, which will become an important part of the new five-year plan. In resolving these problems, the collaboration between science and production should be reinforced even further. The FTINT intends to continue joint operations in collaboration with the republic ministries of ferrous metallurgy and meat and dairy industry, fruit and vegetable farming, and certain other departments.

Liquid nitrogen can be utilized not only for storing food products. One of the important trends is its use in industry to improve the effectiveness of breaking down the most diverse materials. For example, our institute, jointly with the Yuzhgiprotsement /State Institute for the Planning of Cement Plants in the Southern Regions of the USSR/, has proposed the procedure of very fine pulverization of cement by cooling with liquid nitrogen. Under such conditions, we succeed not only in obtaining high-quality cement, but with the aid of the nitrogen atmosphere, in protecting it from saturation by moisture from the air. The UkSSR Ministry of the Construction Materials Industry has taken an interest in the procedure, and has designated it for introduction at a large plant in Balakleya.

Liquid nitrogen also has the long-term function of making considerably easier and reducing the cost of processing metal scrap, since the varying degree of embrittlement of different materials at low temperatures makes it possible to easily classify steel, nonferrous metals, and so forth. The use of liquid nitrogen for processing and recovery of old vehicle tires is very beneficial; granules suitable for various purposes have been obtained. In pharmacology--in obtaining very fine powders for medicines--the use of liquid nitrogen also yields a good result: because of the cooling, the finest particles do not stick together, which protects the preparations from undesirable effects.

All these examples graphically demonstrate that we must shift from experiments to broad use of liquid nitrogen in the most diverse sectors. This will bring considerable gains to the national economy and will be conducive to further improvement in the welfare of the Soviet people.

Mass Production Needed

Moscow IZVESTIYA in Russian 19 Feb 81 p 2

/Article by special correspondent V. Romanyuk: "Refrigerator on Wheels"/

> /Text/ The organization of the mass production of refrigerated trucks will help to incorporate additional reserves in implementing the five-year plan's food program.

In the harvesting season in the fields and orchards there is hardly a concern as important as protecting the crop and shipping it on time. Especially at that time, the refrigerated trucks--these "refrigerators on wheels"--have a great deal of work: bringing the early vegetables, then sour and sweet cherries, plums, berries--the generous gifts of the land--to citizens' tables. However, there is enough work in other seasons as well; and today nimble LUAZ's /vehicle from Lutsk Motor Vehicle Plant/ and sturdy PAZ's /vehicle of Pavlovsk Bus Plant/ speed along the roads and powerful ALK's /Czechoslovak vehicle/ with brightly painted van surfaces rush past swiftly... But every year, even if the harvest is not very abundant, far from everything grown in the orchards and fields reaches the consumer. One of the reasons is that the fleet of refrigerated trucks is very limited, and this subsector of vehicle manufacturing is being developed slowly, not meeting the requirements of the national economy.

At present, the country produces slightly more than 4,000 3-ton "refrigerators on wheels," and low-tonnage refrigerator trucks with a carrying capacity of 0.8 tons, as well as vans with isothermal bodies, are produced in small quantities. With regard to the more powerful 8- to 12-ton refrigerated trucks, our industry does not turn them out at all. The lag in trailer technology as a whole remains significant: instead of the norm recommended by the State Committee for Science and Technology--two to three semitrailers per truck tractor--those are being manufactured today in a ratio of approximately one to one.

Refrigerated trucks and vans with isothermal bodies occupy a very modest place in the system of enterprises of the Ministry of the Automotive Industry. True, it is scheduled in motor vehicle manufacturers' plans to begin output of refrigerated trucks based on the ZIL /made by Moscow Motor Vehicle Plant imeni Likhachev/ and the KamAZ /made by Kama Motor Vehicle Plant/, as well as a 20- to 21-ton "refrigerator on wheels" based on a three-axle Minsk tractor. But these are plans; today there are not even enough designs worked out, and those vehicles being imported--Czechoslovak ALK's and Skoda's--basically handle international transit shipments.

But why has this important subsector of specialized motor transport turned out to be a stepchild? As far back as 1977 the Ministry of the Automotive Industry was charged with preparing capacities to turn out an 8.5-ton refrigerated truck based on a ZIL tractor and a 12-ton refrigerated semitrailer based on a KamAZ tractor. A program to produce 2,500 refrigerated semitrailers annually was assigned to the Krasnoyarsk Truck Trailer Plant. However, the terms for establishing the capacities were disrupted.

"Based on an evaluation of the status of capacity construction and real opportunities for production, the conclusion must be drawn that the Krasnoyarsk Truck Trailer Plant will not be able to turn out one refrigerator in the present five-year plan," states L. Pobedonostsev, chief specialist of the USSR Gossnab administration for supply and intersectorial ties for machine building products. "An alternative is being worked out which calls for development of refrigerator production in Moldavia. Here the output of 1,000 refrigerated trucks annually can be set up in relatively short periods of time and with minor capital investment."

There is not one specialized enterprise in the country today for the production of refrigerated trucks. Capacities available in the motor vehicle industry are being developed extremely slowly. As an example, the Lutsk Motor Vehicle Plant and the Gor'kiy Special-Purpose Motor Vehicle Plant are manufacturing as many refrigerated trucks and vans for shipping perishable products as they turned out in 1980. True, the Baku Special-Purpose Motor Vehicle Plant will double the output of refrigerated trucks, but this doubling is of last year's level, and it has amounted to only several hundred units in all. The needs of the national economy require an increase many times greater.

Speaking about the food program of the 11th Five-Year Plan, Comrade L. I. Brezhnev emphasized that it should unite together the problems of developing agriculture and the industrial sectors which serve it, procurements, storage, transportation and processing of agricultural products, and problems of developing the food industry and trade in foodstuffs.

"The ideal situation is when the fruit harvested in the field is loaded right here into a refrigerator and goes to the store or storage without transshipment," says M. Dorofeyev, chief of a department of the Horticultural Administration of the USSR Ministry of Agriculture. "But there are not enough refrigerated trucks and packing materials for loading, and the transportation base is inefficient. After all, cherries will start to run already after lying for a day. This is the cause of spoilage and losses..."

A lively response from readers gave rise to a letter from a group of workers of the Strashenskiy vehicle depot of the Moldplodovoshchprom Association (IZVESTIYA, No 25). Motor transport workers cited the reasons why they are carrying less vegetables and fruits than they could: an old fleet of refrigerated trucks, insufficient spare parts, poor service on interurban routes. "Of course, it is a shame when part of the vegetables and fruit spoil before they are unloaded," writes N. Tarasov from Kalinin on this subject. "But it is doubly disappointing and disgraceful when a Moldavian refrigerated truck breaks down near Kuybyshev and waits several days for an insignificant part from its vehicle depot. You can imagine the condition in which the berries and fruits will reach the consumer. Spring is not far off, and with it will come early vegetables, then berries. Will it again turn out that sweet berries reaching our table will taste bitter?"

Improvement in the structure of the motor vehicle fleet and an increase in the production of refrigerated, special-purpose, and low-tonnage vehicles has been stipulated in the plan of the Basic Trends. In addition to what has been written in the plan, readers consider it important to provide for the organization of mass production of domestic refrigerated trucks, to improve the provision of specialized interurban vehicle depots with the necessary spare parts and assemblies. Engineer A. Ros' from Zaporozh'ye suggests that new designs be worked out in the 11th Five-Year Plan and that series output of special-purpose vehicles for shipping products be organized.

In a discussion of the problem, P. Sklyarov, deputy chief of the Economic Planning Administration of the USSR Ministry of the Automotive Industry, complained about the limited nature of capacities to turn out refrigerated trucks and generally agreed with the view of readers who propose a provision in the 11th Five-Year Plan for construction of a specialized plant to manufacture refrigerated trucks. However, as they say, the matter "remained undecided" when the discussion came to who should take upon himself all the trouble.

"Our ministry specializes in trucks and passenger cars," he says. "We are not specialists in refrigeration equipment. Let the specialists concern themselves with this matter."

But after all, the Ministry of Chemical and Petroleum Machine Building, which is turning out refrigeration units, is not a specialist in the motor vehicle business. So what do we do, create a new department? Of course not. It is quite different; one must engage in solution of the problem more energetically, without setting hopes on someone who will agree to assume another's burden. We must more efficiently utilize capacities and resources, redistributing them in accordance with the requirements of the national economy.

Yes, we have a great need for Zhiguli's and Moskviches to sell to the people. But readers reasonably raise the question of whether it is necessary at the present stage to assign priority to this requirement when the shortage of specialized truck transport for the purpose of meeting the needs of the food program are more and more critical. Is it not worth it to channel funds earmarked, let us say, for rebuilding the Moscow Motor Vehicle Plant imeni Leninist Komsomol in this five-year plan to establishment of capacities to turn out refrigerated trucks and low-tonnage vehicles? Both specialists and readers see a substantial reserve for increasing output of low-tonnage trucks--for procurement officials, for trade, for consumer cooperatives--in a reorientation of part of the available capacities for passenger car and other vehicle manufacturing. Certainly there is reason for planning organs to examine the problem from these positions as well. The matter is worth it.

A little more than 44,000 low-tonnage trucks are being turned out in the country annually. The demand is significantly higher. After all, for example, products for school canteens and other small eating places in rural localities are now being delivered by heavy trucks. In the 11th Five-Year Plan, it is planned to begin turning out low-tonnage electric trucks for intracity shipments. These long-range developments must not be permitted to be pushed into the background.

The Tsentrosoyuz /Central Union of Consumers' Cooperatives/, for example, is experiencing many difficulties with refrigerated truck transport. Its cooperative freight turnover during the past 10 years has increased by 60 percent. But at the same time, the amount of transportation earmarked for cooperatives has been cut in half. The situation is further complicated by the fact that general-use motor transport organizations, because of the low profitability of shipments caused by the sparseness of roads and the inconstancy in time and tonnage of the freight flow, often refuse to serve consumer cooperatives. In all, about 10 percent of the cooperatives' freight is carried by this form of transport. And the Tsentrosoyuz fleet of refrigerated trucks consists basically of obsolete vehicles. The lack of transportation affects the volume of people's purchases of vegetables and fruit and gives rise to justifiable criticism of the lateness in receiving a crop that has been harvested.

"The Tsentrosoyuz has only 1,860 refrigerated trucks," says V. Kuznetsova, deputy chief of the transport administration. "This is for 2,600 rayons in the country where we purchase various products. We have not received any heavy refrigerated trucks at all in recent years. Of course, this limits our capabilities. As an example, in 1981 members of cooperatives have the opportunity to purchase from the people 8.2 million tons of fruit, vegetables, berries and other products, having provided for an increase of 2.8 million tons compared with last year's level. However, in order to ship just this increase in procurements—and shipment often must be made from remote areas for great distances—an additional 7,000 vehicles will be required, including 1,200 refrigerated trucks or vans with isothermal bodies. For the five-year plan as a whole, taking into account the increased procurements of perishable products, the Tsentrosoyuz requirement for "refrigerators on wheels" amounts to about 7,700 transport units. In the situation which has developed, we must use unpractical motor transport, even simply cartage."

What is more, the available fleet of refrigerated trucks is not being used in the best manner. Improvement in the efficiency of its operation is poorly motivated. The Administration for the Organization of Agricultural Shipments of the RSFSR Ministry of Motor Transport has 1,000 to 1,100 refrigerated trucks on lines. This, of course, is not enough. But when I asked G. Dolgachev, the chief of the administration, about the real requirement, he stated in plain terms that no one knows the actual requirement. Every year the volume of procurements is determined and the distribution of fruit and vegetables by regions is known, but there is no precise target of the quantity which should be shipped out from the south by motor transport. "For the present, we ship less than 100,000 tons per year," explained G. Dolgachev, "but we also could deliver 200,000 tons of fresh vegetables and fruit."

Such a situation, of course, disenchants the transport workers. Incidentally, in the opinion of specialists, motor transport successfully competes with rail transport for up to 1,200 kilometers, releasing the steel mainlines for other urgent national economic freight. The refrigerated truck also has a number of advantages: it can be loaded directly in the field without additional transshipment, and does not require, like the five-car refrigerated section, an accumulation of freight during which losses of part of the product are inevitable.

At the USSR Gosplan, I had occasion to hear contradictory opinions about which form of refrigerated transport—motor vehicle or rail—ought to be given preference for development. It appears that, all the same, it is impossible to agree with those who, in counting on fuel savings with rail shipments, have no objection to slowing down development of refrigerated truck production. By winning in one, we lose in the other—providing the people of the country with fresh high-quality fruit, succulent and fragrant gifts of the orchards and fields. And that task is paramount.

Gosplan Followup

Moscow IZVESTIYA in Russian 18 Jul 81 p 2

/Article by correspondent V. Romanyuk: "More About the Refrigerator on Wheels"/

/Text/ The question under discussion in the article "Refrigerators on Wheels" (IZVESTIYA No 41) concerned the reserves to carry out the food program which can be put into effect after organizing mass production of refrigerated trucks. It is not enough to raise and harvest the gifts of the bountiful land; it is important to preserve and deliver the crop to consumers safely. Over the last five-year plan, as noted at the party's 26th congress, the average annual per capita consumption of vegetables and fruit increased more slowly than their production. Losses had a substantial influence on this statistic.

The newspaper's article was discussed at the USSR Gosplan. In a response signed by V. Selifonov, chief of the Department of Motor Vehicle, Tractor and Agricultural Machine Building and Machine Building for Livestock Raising and Fodder Production, it states that while production of 9,600 units of refrigerated trucks and vehicles with isothermal bodies is being planned in 1981, it is being projected in calculations for the plan to produce only 13,000 units of such vehicles with a carrying capacity of up to 5 tons in 1985. Let us say frankly that these rates will not be able to meet the requirements of a developing agro-industrial complex.

Here is what P. Volkov, USSR deputy minister of the fruit and vegetable industry, reports. The present five-year plan specifies that the volume of deliveries of fruit and vegetable products for the country's use is to be increased and brought up to 8 million tons. At the same time, the increase in the volume of shipments falls chiefly on motor vehicle transport.

The Ministry of the Fruit and Vegetable Industry has outlined a number of measures for better utilization of the available specialized rolling stock, as well as for further development of the network of motor vehicle enterprises for the organization of shipments of fruit and vegetables from the Moldavian, Azerbaijan and Uzbek SSR's and regions of the Northern Caucasus to the country's industrial centers. At present, the Ministry of the Fruit and Vegetable Industry is using more than 2,000 refrigerated trucks in the system. In order to ensure delivery of the increasing volume of vegetable and fruit produce, according to the ministry's estimates, it will be necessary to increase the fleet of refrigerated vehicles up to 9,000 units in the current five-year plan. "In this connection," writes P. Volkov, "we would consider it advisable to organize for 1982-1983 the output of no less than 3,000 units of refrigerated semitrailers annually, which will make it possible to more fully meet the people's demands for early vegetables and fruits by accelerating the periods of time for delivery and reducing losses in shipments."

Deputy Minister of Agriculture N. Stolbushkin informs the editorial staff of the unsatisfactory provision of "refrigerators on wheels" for rural workers. Agriculture's estimated requirement for refrigerated trucks, based on the annual volumes of shipments of early vegetables, fruit, berries, grapes, meat, milk and other perishable freight, amounts to 19,700 tons. However, the orders for these means of transportation are not being met from year to year. So agriculture's order for 1981 consists of 1,100 refrigerated trucks, but the plan for delivery is just 558 units, which is obviously inadequate.

And here is the refrigerated truck situation which has taken shape in consumer cooperatives, which purchase agricultural produce from the people. G. Pykhtunov, chief of the transportation administration of the Tsentrosoyuz /Central Union of Consumers' Cooperatives/, told the editorial staff that consumer cooperative organizations' requirement for refrigerated trucks with a carrying capacity of 12 tons amounts to 480 units annually.

The vehicles received by consumer cooperatives over the past 5 years only cover the inventory of vehicles required for 1 year. Meanwhile, cooperative members have the opportunity this year to purchase from the people 2.8 million tons of fruit, vegetables, berries and other products more than last year. In order to ship just this increase, an additional 1,200 refrigerated trucks or vans with isothermal bodies are required; for the five-year plan, taking into account the increase in procurements of perishable products, 7,700 "refrigerators on wheels" will be required.

But since the increase in the fleet of refrigerated trucks lags behind the increase in demand, unpractical transportation--trucks and even carts--must be used in shipping fruits and vegetables, which results in produce losses. The experience of many years in delivering these products from rayons of the Northern Caucasus to Moscow, Leningrad and other industrial centers indicates that shipping them in refrigerated trucks is the most expedient--the period of time does not exceed 72 hours, and the quality of the produce is preserved at a high level. In 1980, the volume of such shipments reached 93,000 tons. "In the opinion of the RSFSR Ministry of Motor Transport," Deputy Minister N. Nikanorov writes the editorial staff, "the delivery of vegetables and fruit could be significantly increased even in 1981, both by increasing shipments of fruit and vegetables from the Northern Caucasus regions as well as by organizing shipments of tomatoes from Astrakhanskaya and Volgogradskaya Oblasts. However, the RSFSR Gosplan is not planning these shipments. The corresponding increase in the fleet of heavy refrigerated trucks has not been planned, either."

Just what is being undertaken to resolve this important problem? The task has been placed directly before the USSR Ministry of the Automotive Industry in the Basic Trends for the Country's Economic and Social Development: to expand the production of refrigerated trucks, trailers and semitrailers, and specialized transport for the delivery of goods for public consumption. In a response signed by V. Korovin, chief of the Enterprise Planning Administration of the USSR Ministry of the Automotive Industry, he admits that the article "Refrigerators on Wheels" correctly indicates the lag which has developed in the output of refrigerated trucks. But what conclusions are drawn from this by those who write responses to the editorial staff? That neither the Ministry of the Fruit and Vegetable Industry nor the Tsentrosoyuz will receive any domestic heavy refrigerated trucks in the current five-year plan, because only the capacities are being established in this five-year plan, while production will actually appear in the next five-year period.

Well, what is happening with production of refrigerated trucks at the Krasnoyarsk Truck Trailer Plant on which so many hopes had been pinned? Much time has been spent on remodeling the design of the plant which, under the original plan, was to have made tractor trailers as well; there also has been much vagueness about the design of the refrigerated truck itself. But not everything is well with the refrigerated semitrailer with a load capacity of 11.5 tons for the KamAZ /Kama Motor Vehicle Plant/ truck tractor, either. Completion of the acceptance tests and submission of technical specifications in preparation for production are planned for 1983, but output of the first industrial series will be in 1984, with the beginning of series output in 1985. However, as V. Shurinov, the plant's chief engineer, writes, preparation for production is being held up because of the lack of technical documentation and may be completed no earlier than in 1984 (the SKB [special design bureau] of the Odessa Motor Vehicle Assembly Plant is developing a model of the refrigerated truck).

A comprehensive description of the situation which has developed is contained in the response from the State Scientific Research Institute of Motor Vehicle Transportation (NIIAT) which was signed by V. Ivanov, director of the institute and doctor of technical sciences. It states that the quality and operational characteristics of the refrigerated trucks being turned out in the country do not correspond at all to operational requirements; the product list of refrigerated trucks and semitrailers needed for the national economy, which includes seven models, was determined a long time ago and included in the standardization of specialized rolling stock, confirmed by new standardization for the period up to 1990, but the plan for developing production of refrigerated trucks is not being fulfilled for one model. Meanwhile, the demand for increasing the output of "refrigerators on wheels," as well as for light trucks, is becoming more and more acute.

Production of refrigerated trucks with a load capacity of 2.5 tons has been organized at the newly established capacities of the Baku Specialized Motor Vehicle Plant. Output of refrigerated trucks with a load capacity of 0.8 tons will begin at the Yerevan Motor Vehicle Plant in 1983. However, the planned volume of increased output of such necessary equipment is not high at either enterprise.

The lag in developing production of refrigeration units, which the Ministry of Chemical and Petroleum Machine Building has been charged with delivering, is worrying motor vehicle manufacturers. G. Shein, deputy minister of chemical and petroleum machine building, sent a response from which it appears that 2,600 cold storage units for refrigerated trucks with a load capacity of 2 to 5 tons will be built in 1981. Beginning in 1982, output of units with improved technical and economic features is being planned; measures are being taken to increase the output of cooling machinery for refrigerated trucks, for which the establishment of additional capacities has been stipulated in the 11th Five-Year Plan. But from the response it is not clear whether the program outlined will meet the requirement for developing the production of "refrigerators on wheels."

With the aim of providing transport for the increasing number of deliveries of fresh vegetables, fruit and grapes to the country's industrial centers, leading organizations in the Moldavian SSR have appealed to national organs with the request to review the matter of building an enterprise in the republic to produce heavy refrigerated trucks at the base of the Tiraspol' Truck Trailer Plant of the USSR Ministry of the Automotive Industry. Here they intend to turn out 1,000 units of truck trailers with a load capacity of 20 to 22 tons annually for the truck tractors of the Minsk Motor Vehicle Plant. In reporting this to the editorial staff, P. Shapa, deputy chairman of the Moldavian SSR Council of Ministers, also indicated in his response that construction of a plant to repair refrigerated railway rolling stock is being planned in Moldavia.

However, all these half-measures do not resolve the problem as a whole, of course. As Comrade L. I. Brezhnev pointed out at the party's 26th congress, the volume of output produced by agriculture today makes it possible to appreciably improve the supply to the people of many forms of foodstuffs. Large losses impede solution of this task. For this reason, in continuing to increase production of vegetables and fruit, it is necessary to improve their transportation, storage and processing. In that way, organization of the production of "refrigerators on wheels" of all types becomes an important component part of the food program of the 11th Five-Year Plan. More fully providing the country's people with the succulent and fragrant gifts of the orchards and fields is a task of paramount importance. And the refrigerated truck is irreplaceable in resolving this without unnecessary transshipments--after all, it can go directly into the field; it does not require accumulation of a large quantity of fruit, and preserves the palatability of the produce for a long time. Is it not time to take more decisive measures to organize mass production of "refrigerators on wheels" without limiting ourselves to a statement of present difficulties?

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FERTILIZER, HERBICIDE MEASURES FOR PROTECTING FEED CROP YIELDS

Moscow SEL'SKAYA ZHIZN' in Russian 26 Jun. 81 p 2

[Article by G. Gulyayev, director of scientific research Institute of Agriculture for the Central Nonchernozem Zone and K. Saranin, head of the Department of Farming: "In Order Not To Lose the Feed Harvest"]

[Text] This year the heading of panicles and forming of ears in the cereal grasses occurred earlier than usual by one and a half to two weeks. So as not to lose the crops, they had to be mowed earlier. The greatest nutrient yield per hectare is being obtained by the farms when the first cutting of the cereal grasses is carried out during the heading stage and for pulse crops -- during the budding phase. Thus, when a clover-timothy mixture was cut down at the commencement of the clover budding, 48.3 quintals of feed units per hectare were obtained, during the phase of complete budding -- 45.4 quintals, at the commencement of blossoming -- 34.2 quintals and during the phase of complete blossoming -- 30.1 quintals of feed units per hectare.

Under the conditions prevailing this year, an early cutting will make it possible to obtain rich second and third cuttings of the grasses. During 1979, the conditions of which were similar to those being experienced this year, experiments carried out at the institute in connection with early mowings combined with nitrogen fertilizer top dressings produced hay yields from a second cutting on the order of 70 quintals per hectare! This amount was 3-4 times more than if fertilizer was not applied. Even greater results are obtained when fertilization is combined with irrigation. More extensive use should be made of ammonia liquor as a top dressing for perennial grasses.

Feed production can be increased by employing post-cutting and post-harvest sowings of such crops as winter and spring rape, oil-bearing radishes, white mustard and peas-oats-sunflower mixtures. Crops of the Cruciferae family can be sown until 5-10 August. Prior to the end of the growing season, when grown on fertile soil, these crops furnish 150-200 quintals of fodder per hectare.

In order to compensate for the feed shortage during the first half of summer, it is necessary during the remaining period of time to increase the quantity of feed being obtained from cultivated pastures through the application of mineral fertilizers, especially nitrogen fertilizers. Following each grazing, no less than 2 quintals of ammonium nitrate are applied and on cultivated pastures having a predominance of leguminous grasses in the grass stand -- 2 quintals of superphosphate and 1 quintal of potassium chloride per hectare. When watering cultivated pastures consisting of heavy clay-loam and medium clay-loam soils, the watering norm is divided in two. The watering is terminated prior to the commencement of water runoff from the surface of the pasture (transferring to the other position) and it is resumed 12-24 hours later, following complete absorption of the moisture.

Regular pasturage is organized according to schedules on all of the cultivated pastures, with grazing not being permitted on grass which is either too young or overgrown. No more than five grazing cycles are carried out during a season. Too frequent pasturing lowers the productivity of a meadow.

Great importance is being attached this year to the timely and complete gathering up of the straw and chaff during the harvesting of the grain crops and to using the straw for ensiling with grass.

Favorable conditions exist this year in the nonchernozem zone for the growing of corn. In the majority of oblasts, the corn sowings are in fine condition. Taking into account the great requirement for forage grain, it should ideally be cultivated this year using a grain technology. In order to obtain two ears on each plant, the plantings should be provided with a top dressing of ammonia liquor -- at the rate of 500-600 kilograms per hectare. At times the inter-row tillings are referred to as "dry watering" and this year the destruction of weeds in the rows by means of herbicides will be exceptionally effective.

If the corn fields were not treated with simasine or atrasine following sowing, then during the phase of 3-5 leaves they are treated with a mixture consisting of amino salt 2.4-D and these herbicides (0.6-0.8 kilograms of active amino salt and a kilogram of simasine or atrasine per hectare). This method ensures the destruction of weed seedlings, with extended residual effect for the simasine and atrasine. The use of small dosages of herbicides makes it possible to sow other crops on this field the following year.

Measures must be undertaken aimed at obtaining the required quantity of perennial grass seed. It is especially difficult to obtain clover seed. During any year, its seed plants are severely infested by the clover seed-eater and the stalk and leaf weevils. It is recommended that two cuttings of clover be obtained prior to budding, or that the plants be treated with chlorophos during the period of stem growth and prior to budding.

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